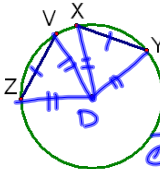


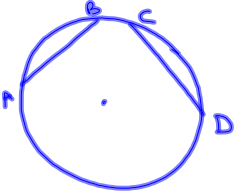
10-3 Apply Properties of Chords



Given: $\overline{XY} \cong \overline{VZ}$
Prove: $\widehat{XY} \cong \widehat{VZ}$

<p>① Given</p> <p>② Through any 2 pts there is exactly one line</p> <p>③ All radii in a circle are \cong</p> <p>④ def. of radii</p> <p>⑤ SSS</p> <p>⑥ CPCTC</p> <p>⑦ def. of \cong</p> <p>⑧ def. of measure of minor arc</p> <p>⑨ def. of \cong</p> <p>⑩ symmetric</p>	<p>① Given</p> <p>② Through any 2 pts there is exactly one line</p> <p>③ All radii in a circle are \cong</p> <p>④ def. of radii</p> <p>⑤ SSS</p> <p>⑥ CPCTC</p> <p>⑦ def. of \cong</p> <p>⑧ def. of measure of minor arc</p> <p>⑨ def. of \cong</p> <p>⑩ symmetric</p>
---	---

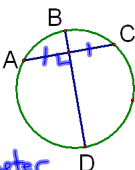
Theorem 10.3--In a circle or in congruent circles, 2 minor arcs are congruent iff their corresponding chords are congruent



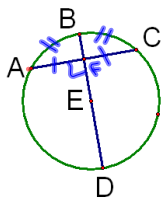
G: $\overline{AB} \cong \overline{CD}$
C: $\widehat{AB} \cong \widehat{CD}$
or
G: $\widehat{AB} \cong \widehat{CD}$
C: $\overline{AB} \cong \overline{CD}$

Theorem 10-4 If one chord is a perpendicular bisector of another chord, then the first chord is a diameter.

G: \overline{BD} perp. bis of \overline{AC}



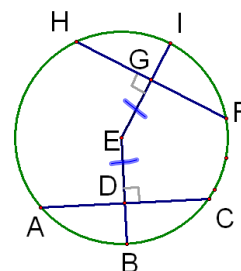
C: \overline{BD} is the diameter



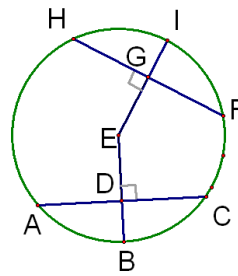
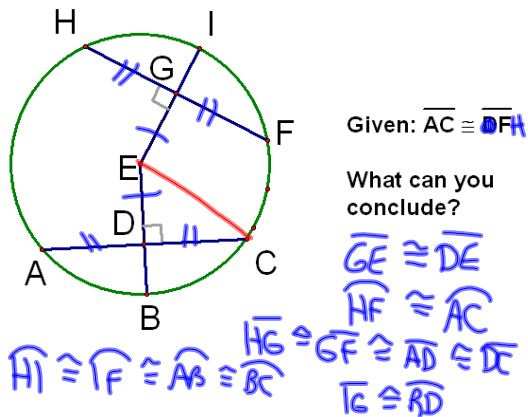
Theorem 10-5 In a circle, if the diameter is perpendicular to a chord, it bisects the chord and its arc.

G: $\overline{BD} \perp \overline{AC}$
C: $\overline{AF} \cong \overline{FC}$; $\widehat{AB} \cong \widehat{BC}$

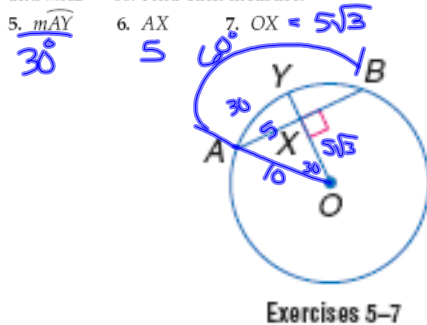
Theorem 10.6--In a circle, or in congruent circles, 2 chords are congruent iff they are equidistant from the center



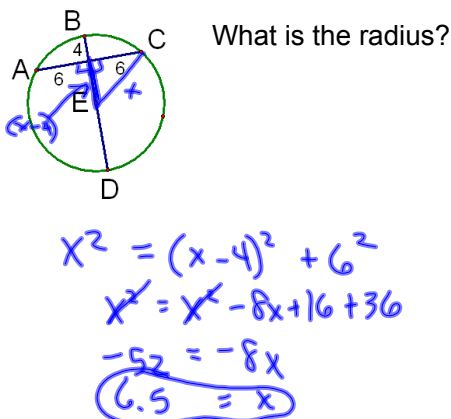
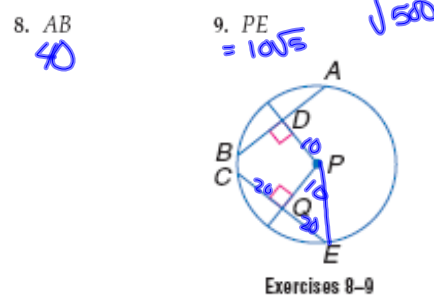
G: $\overline{AF} \cong \overline{AC}$
C: $\overline{GE} \cong \overline{DE}$
or
G: $\overline{GE} \cong \overline{DE}$
C: $\widehat{HF} \cong \widehat{AC}$



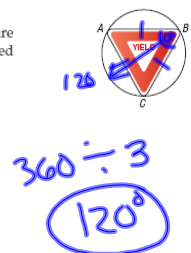
Circle O has a radius of 10, $AB = 10$, and $m\widehat{AB} = 60^\circ$. Find each measure.



In $\odot P$, $PD = 10$, $PQ = 10$, and $QE = 20$. Find each measure.

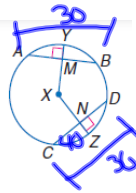


Application 10. **TRAFFIC SIGNS** A yield sign is an equilateral triangle. Find the measure of each arc of the circle circumscribed about the yield sign.



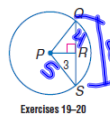
In $\odot X$, $AB = 30$, $CD = 30$, and $m\widehat{CZ} = 40$. Find each measure.

- | | |
|--------------------------|--------------------------|
| 11. $AM = 15$ | 12. $MB = 15$ |
| 13. $CN = 15$ | 14. $ND = 15$ |
| 15. $m\widehat{DZ} = 40$ | 16. $m\widehat{CD} = 80$ |
| 17. $m\widehat{AB} = 80$ | 18. $m\widehat{YB} = 40$ |

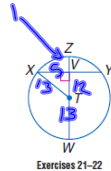


The radius of $\odot P$ is 5 and $PR = 3$. Find each measure.

- | | |
|--------------|---------------|
| 19. $QR = 4$ | 20. $QS = 8$ |
| 21. $XV = 5$ | 22. $XY = 10$ |

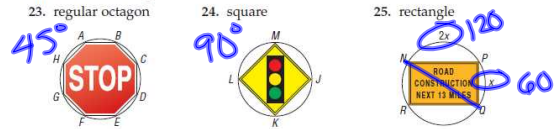


Exercises 19-20



Exercises 21-22

TRAFFIC SIGNS Determine the measure of each arc of the circle circumscribed about the traffic sign.



In $\odot F$, $\overline{FH} \cong \overline{FL}$ and $FK = 17$. Find each measure.

- | | |
|---------------|---------------|
| 26. $LK = 15$ | 27. $KM = 30$ |
| 28. $JG = 30$ | 29. $JH = 15$ |



Exercises 26-29

In $\odot D$, $CF = 8$, $DE = FD$, and $DC = 10$. Find each measure.

- | | |
|---------------|---------------|
| 30. $FB = 8$ | 31. $BC = 16$ |
| 32. $AB = 16$ | 33. $ED = 6$ |



Exercises 30-33

34. **ALGEBRA** In $\odot Z$, $PZ = ZQ$, $XY = 4a - 5$, and $ST = -5a + 13$. Find SQ .

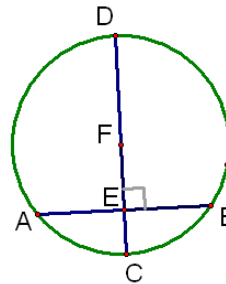


35. **ALGEBRA** In $\odot B$, the diameter



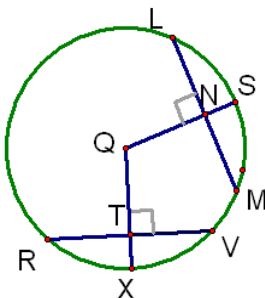
HW p667-669
3-11, 18-20, 24, 30

SOHCANTOA



Given: $\overline{AB} \perp \overline{CD}$

Prove: $\overline{AE} \cong \overline{EB}$



Given: $\overline{LM} \perp \overline{RS}$
 $\overline{LM} \cong \overline{RV}$
 $\overline{QT} \perp \overline{RV}$

Prove: $\overline{QN} \cong \overline{QT}$